

Ebony Inlay Cherry Box



I designed this cherry box with an ebony inlay for a beginner's woodworking class that I teach. It is pleasing in proportion, colour and shape, and satisfying to build.

This box is a suitable project to guide newcomers through some of the fundamentals of woodworking, it is more of an intermediate skill level project for someone working alone — due to the tapered sides on the box and the need for at least one template. I chose cherry as the main wood and ebony for the inlay, but just about any two contrasting woods could be used. It was designed to be the size of a jewelry or small treasure box. However, it could be built to any size that suits you. A limiting factor would be the size of your table saw blade or, more specifically, how high a taper your table saw can cut. The overall width and length of the box is practically limitless.

There are two main components in the construction of this box. First, you build the box and then you fit your inlaid lid to the box. You should be able to build this little treasure box in a day.

Begin By Making the Box

- Crosscut a rough piece of stock 3" x 36". From this board you will cut the front and back (A), and sides (B) of the box. If you alter the dimensions of the finished box, ensure that you cut the rough stock a few extra inches longer. This way you will be able to trim off any machine snipe in the finished pieces.
- Joint a face and edge of the board flat, true, and square.
- Rip the board to 2 1/16" on the table saw. The extra 1/16" can be cleaned up on the jointer or with a hand plane to rid the board of saw marks.

- Plane the board to 3/8" on your thickness planer. If your board is fairly thick you can resaw it to 1/16" on your table saw or band saw to save time planing.

- Using a mitre saw and crosscut blade, cut the board to finished lengths. Square up one end first, and then measure and mark the lengths. Then cut two pieces at 9" for the front (A) and back (A) and two at 5 1/4" for the sides (B).

- Use a dado blade on your table saw to cut a 1/4" x 1/4" dado on the insides of the front and back pieces. Alternately you can cut it with two passes on a rip blade, or use a router table and 1/4" router bit. The distance in from the ends is the thickness of the box material. Using an actual milled piece, rather than your tape measure or ruler, will give you a more precise fit. In other words, use one of your side pieces to set your table saw fence so that when the fence is locked in position the outside surface of the piece is flush with the outer side of the blade.

- Reset your table saw to cut the corresponding rabbets on the sides. Again, you could use a dado blade, two passes with a single blade, or router table. A rip blade will give a nice square corner inside the dado and the rabbet. A cross cut blade will leave a tiny ridge. Note that the rabbet is cut on the outside of the side pieces. You will find it helpful to begin with the blade lower and cutting less in width than desired, and gradually raising the blade to the exact height and moving the fence away from the blade to create the correct rabbet width. Attach a

sacrificial fence to the table saw's fence because you will be cutting right next to it, if not into it. Keep adjusting your setting by minute increments until the rabbet fits perfectly into the adjoining dado. A masterful fit takes some pressure to push the joint together but not a lot of force. "Fit, don't force," as an instructor of mine used to say. Ideally you should be able to push the two pieces together and then hold it upside down without the rabbeted piece falling out.

- Run a 1/32" groove into the front, back and side pieces (A, B) for the bottom to fit into. The groove needs to be 3/16" deep and 3/16" above the bottom. My preferred method is to use a router table. This way, it is easy to do a stopped groove in the front and back pieces (A) without having to resort to any chisel work.

- Edge glue two or three strips of stock together to make the bottom (C). Start oversized, glue up flat, plane to thickness, and then cut to final width and length.

- Cut a rabbet on the bottom piece to fit into the groove on the box frame. I like to make this rabbet 1/16" wider than the groove so that a reveal details the bottom of the finished product. Be sure to check your sizes before assembling. The width of the bottom should have room to expand and contract within the groove.

- Assemble the box without glue, making sure everything fits together nicely. When you are satisfied with the fit, glue the box together, measuring the diagonals to check for square.

- After the glue has set, cut the tapers

on all four sides of the box using a combination blade in your table saw. The angle is approximately 6°, but what is more important is that the angle is maximized for the thickness of the wood without interfering with the dado or groove on the other side. To figure out the angle draw a line on the box going from the outer top tip of the side to a point that leaves the bottom groove plus 1/8" intact. Use a T-bevel to record the angle and set your saw blade.

- Sand the box to 180 grit.

Now Make the Lid

- Glue up sufficient stock for the lid (D), making it slightly oversized.
- Plane the lid to thickness, and then cut it to width and length.
- Plane a piece of ebony to 1/8", and then cut 1/8" strips for the inlay (E, F, G). Cutting your ebony strips with your band saw and a fence will reduce wasting too much of an expensive wood.
- First cut a 1/8" dado along the ends of the lid for inlay (F). The dado should be 3/4" in from the lid edge.
- Glue the ebony strips along the ends.
- Now you can cut the dados along the sides of the lid for inlay (G).
- You will be cutting through the end inlays.
- Glue the ebony strips along the sides.
- Sand the inlays flush to the top of the lid.
- If you plan on making a number of center inlays, it is best to make a diamond template to be used in conjunction with a router and bit. If you will only be making one inlay, it will suffice to mark out the shape on the lid and freehand cut it with a router and clean up the edges and corners with a chisel.

MATERIALS LIST (All measurements in inches)

	Part	Qty	T	W	L
A	Front and back	2	3/8	2	9
B	Sides	2	3/8	2	5 1/4
C	Bottom	1	3/16	5 1/4	8 1/4
D	Lid	1	1/2	6	9
E	Inlay	2	1/8	1/8	9
F	Inlay	2	1/8	1/8	6
G	Inlay	1	1/8	1 1/4	1 1/4

All stock is cherry, except the inlay, which is ebony.

SUPPLY CHECKLIST

- 1.5BF cherry, ebony leftovers
- two 3/16" x 1" hinges • spray on lacquer or wipe-on polyurethane

SOURCES

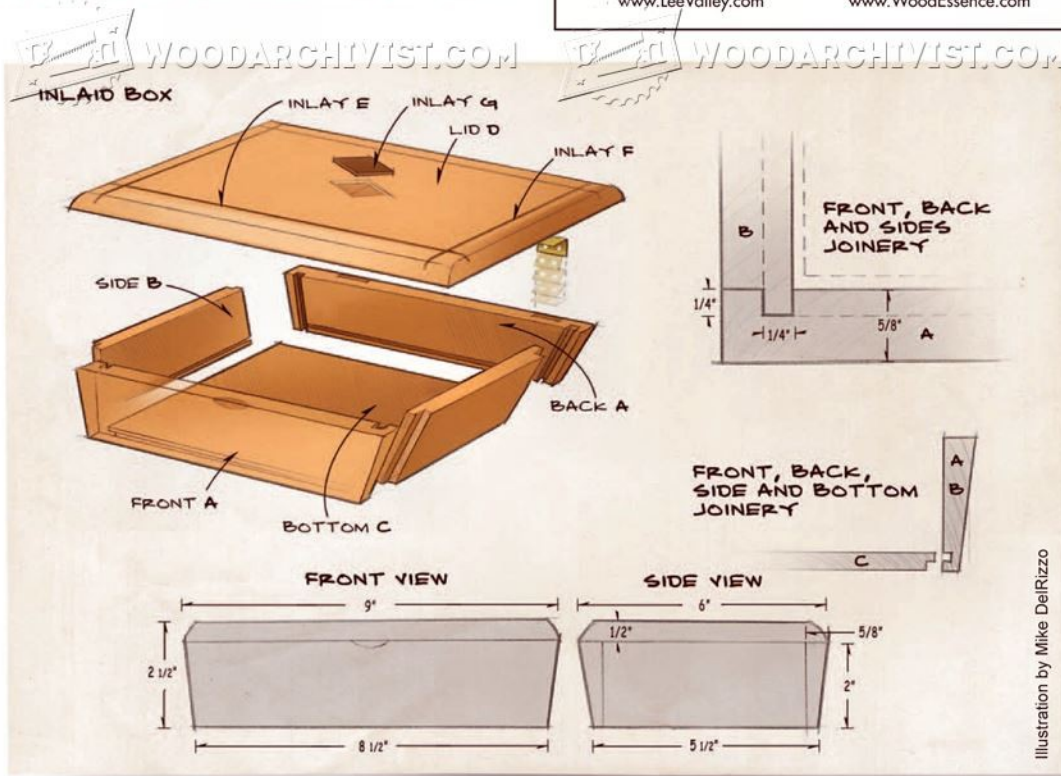
HARDWARE

www.HomeHardware.ca
www.WorkshopSupply.com

FINISHING SUPPLIES

www.Circa1850.com
www.LeeValley.com

www.HomeHardware.ca
www.WoodEssence.com



A thin cardboard template or an actual inlay piece will help to draw out the exact shape on the cherry.

- Fit the ebony shape to the cutout and glue it in. Sand flush.
- Profile the edges of the lid using a $\frac{3}{4}$ " radius router bit. You need only expose part of the bit to get a gentle curve.
- Rout a finger pull in the front of the box using a cove bit. The size is your choice.
- Cut the mortises for the hinges, which should be just less than $\frac{5}{8}$ " wide so that the screws will not protrude the lid profile. This can be done with a chisel or with a router and template, and template bit. Pre-drill carefully marked out holes for the screws and screw on the hinges.

Apply the Finishing Touches

While there are many finishes that would work on this box, my personal favourites are sprayed-on lacquer or wipe-on polyurethane, for ease of application and protection. For a small project like this you can use a can of spray lacquer. Cherry has a tendency to blotch, so consider using a wood sealer, particularly if you use an oil based finish.

Small boxes like this are a great way to use up leftover stock, which we all seem to accumulate, and they provide a way for you to showcase your woodworking skills. The design possibilities, and ways of combining various woods are endless. And, best of all, they make unique gifts for which everyone seems to find a myriad of uses.



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